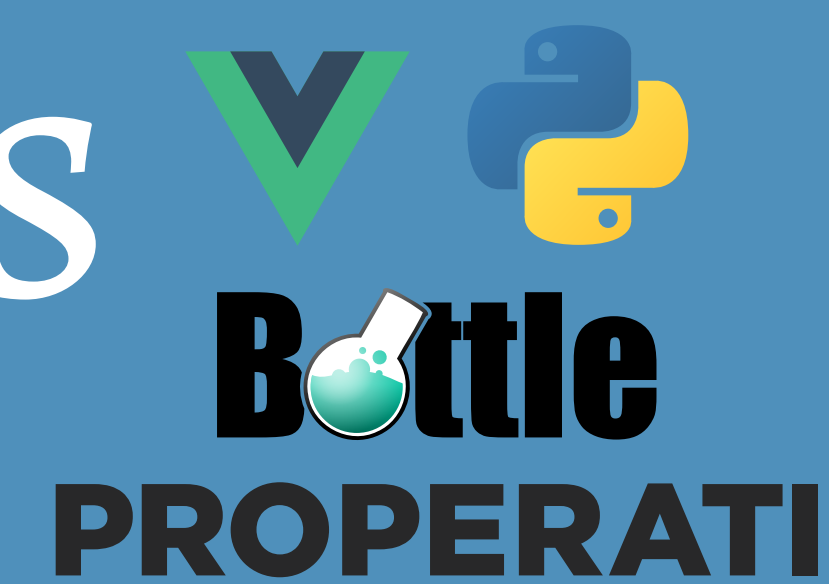# Housing in Buenos Aires

An Analysis of Neighborhood Dynamics

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System Description

We built a web application visualizing an analysis of Buenos Aires' real estate market. The analysis makes use of Properati's rent and sales data and open data from the Buenos Aires government. The web app uses heatmaps of the neighborhoods to show overall trends, charts to illustrate feature importances in price prediction, and a point map of listings that mislabel the neighborhood--an Argentinian "Buckhead Effect".
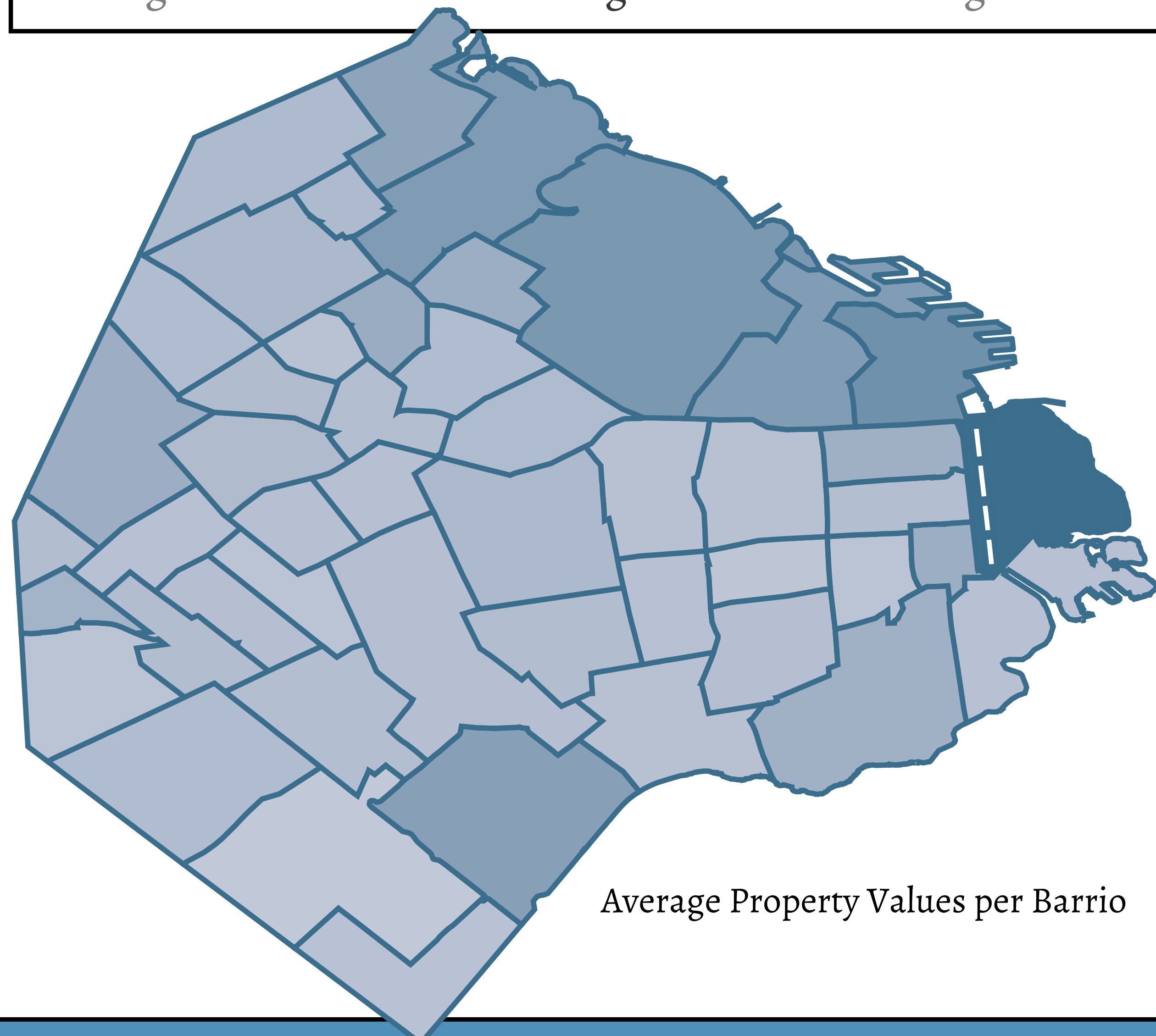
Average Property Values per Barrio

Data

Neighborhoods or "barrios" characterization using:
- Rental and sale listings in Properati between January 2015 and March 2018
- Argentina's 2010 Census
- Buenos Aires' officially recorded property sales
- Landmarks, social care centers, sport amenities, and health providers.
- Python scripts and QGIS used to merge on geospacial attributes in datasets.

Analysis

Formed statistically based characterization using:
- Linear Regression for price prediction using the Properati price.
- Mutual Information Regression to determine important features in price prediction.
- Identified properties that misclassified their location on Properati.
- Analyzed the gaps between advertised sale price on Properati and the city's recorded purchase price and performed additional feature selections on properties that had these gaps.
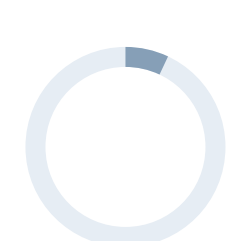
Distribution of Wealth in Neighborhoods

Purchase Price
% < 10th
% > 90th

Rental Price
% > 90th
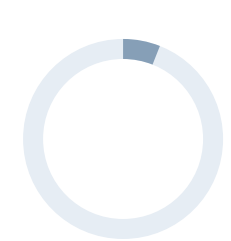% < 10th

Barrio Mislabelling
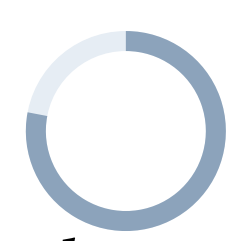
Belgrano
A historical neighborhood with several football clubs and popular for shopping.
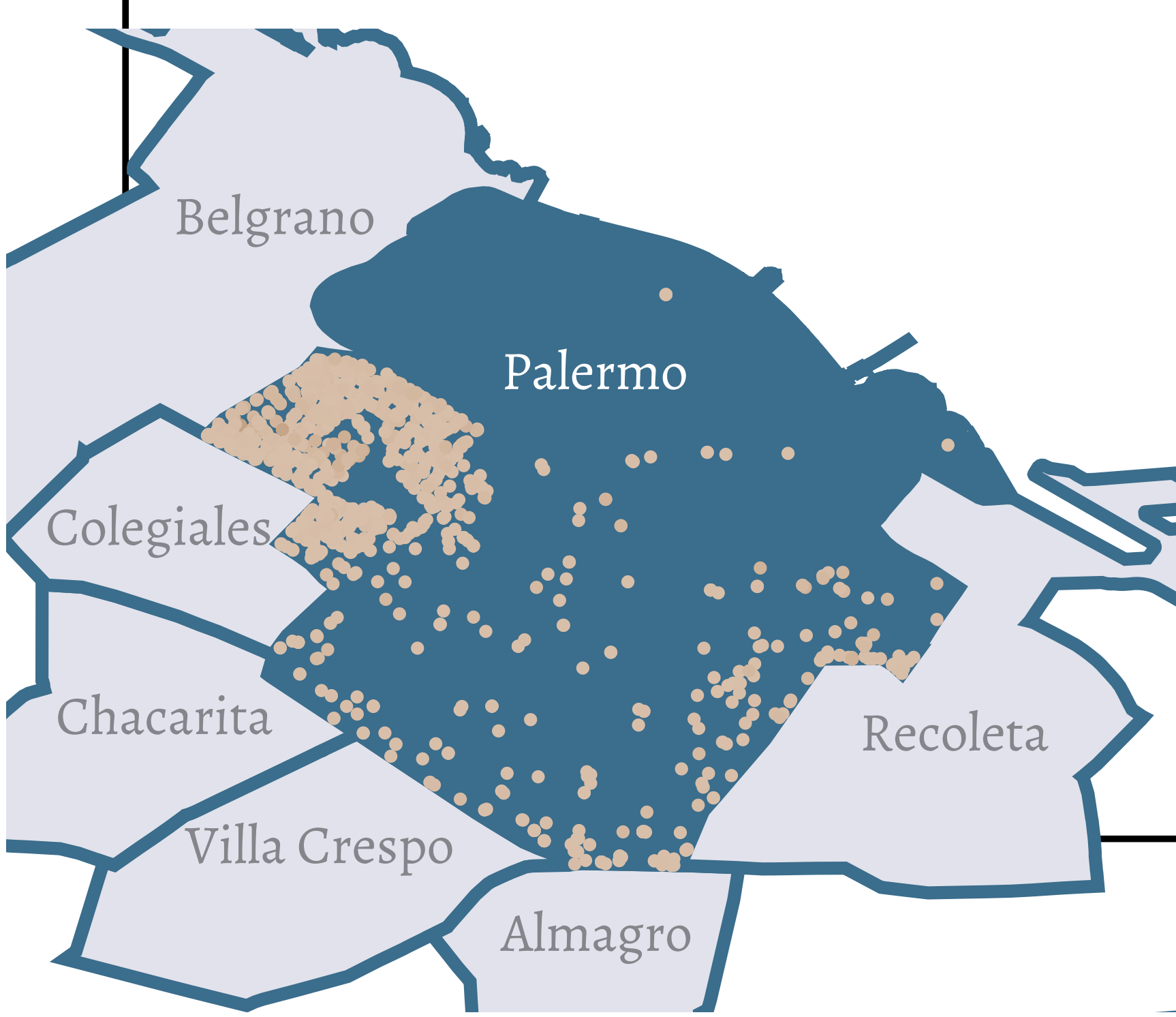
Recoleta
A tourist destination and where much of the "old money" of BA lives.
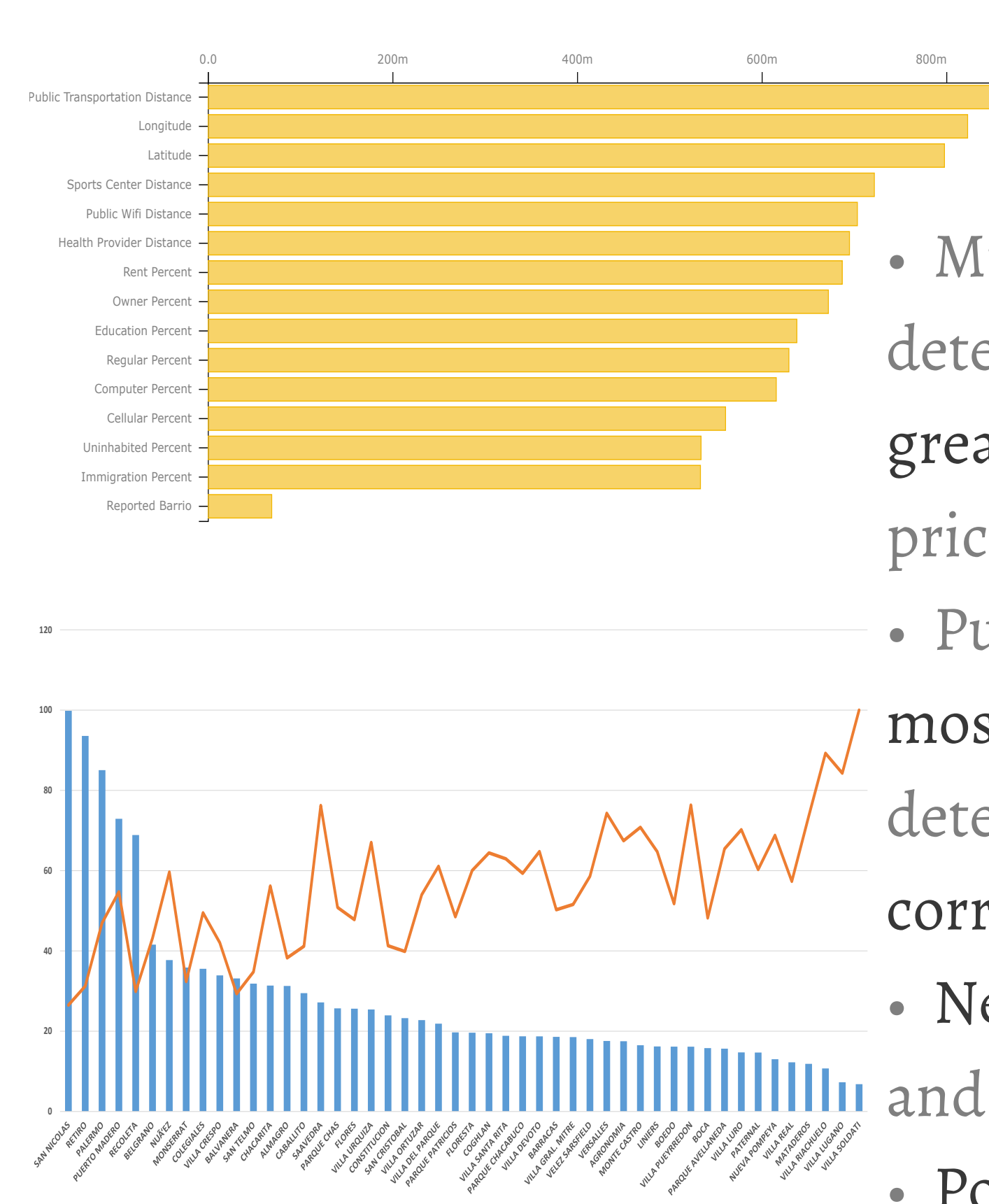
Colegiales
Residential area that is just recently beginning to rapidly develop.

- In general, homes misclassified in listings of the lower pricing percentiles.

- Poor neighborhoods more often misclassify beyond edgewise distances.

- Up-and-coming neighborhoods were more likely to be listed in misclassifications.

Factor Analysis

- Mutual information gain determined the features with the greatest effect on the advertised price.

- Public transportation access is the most important feature in determining price with a positive correlation (55%).

- Negative correlation (61%) on price and distance to health centers.

- Positive correlation (76%) with education on price predicition.